

Lesson Builder

Mode, Median, and

Range

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Format: Frostburg State University Lesson Format

Based On: Based on lesson by Jamie Rayner

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GENERAL INFORMATION

Author	Jamie Rayner and Ashton Carr
Subject(s)	Mathematics
Topic or Unit of Study	Mode, Median, and Range
Concept(s)	The students will be able to identify mode, median, and range using a set of data.
Grade/Level	Grade 4
Time Allotment	1 class periods. 1 Hr. per class.
Assessment of Prior Knowledge	We will assess prior knowledge by asking the students what they know about mode, median and range.
Instructional Materials	30 mini packs of Skittles Worksheets
Resources	
Summary	We will begin by motivating the students with Skittles and having them separate them into colors. We will use the Skittles to find mode, median, and range as a class, and each student individually. They will record the data on a chart.

STANDARDS AND OBJECTIVES

Standards	<p>Display: <input type="radio"/> Collapse All <input checked="" type="radio"/> Expand All</p> <p>▼ MD - Maryland Teacher Technology Standards Developed from Maryland's Preparing Tomorrow's Teachers to Use Technology (PT3), USDOE Catalyst Grant, May 2002.</p> <p>▼ Standard and Outcome II(B): Communication: Use technology to communicate information in a variety of formats. Indicator 3: Use multiple digital sources to communicate information online.</p> <p>▼ MD- Maryland Content Standards</p> <p>▼ Subject: MATHEMATICS</p> <p>▼ Grade: 4</p> <p>▼ Content Standard: Standard 4.0 Knowledge of Statistics- Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.</p> <p>▼ Area: B. Data Analysis</p> <p>▼ Indicator Statement: 2. Describe a set of data</p> <p>▼ Objective: a. Determine median, mode, and range Assessment Limit: Assessment limit: Use no more than 8 pieces of data and whole numbers (0 – 100)</p> <p>▼ MD- Technology Literacy Standards for Students (Technology Literacy by 8th Grade)</p> <p>▼ Standard: Standard 3.0 – Technology for Learning and Collaboration: Use a variety of technologies for learning and collaboration</p> <p>▼ Grade: Grade 4</p> <p>▼ Topic: B. Encourage Collaboration</p> <p>▼ Skill: 1. Use and explain how selected technology tools encourage collaboration Indicator: a) Use technology tools to work collaboratively within the classroom</p>
Lesson Objective(s)	<p><u>Common Core Standard:</u></p> <ul style="list-style-type: none"> • Measurement and Data 4.md • Represent and interpret data. 4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

PROCEDURES AND MODIFICATIONS

Introduction(Motivation)	<ul style="list-style-type: none"> • We will begin by asking the students if they have ever heard of the terms: mode, median, and range. • We will motivate the students by handing out a mini pack of Skittles to
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	<p>each student.</p> <ul style="list-style-type: none"> • The students will be instructed not to eat the Skittles. <p>(Jamie and Ashton)</p>
Teaching / Activities	<ol style="list-style-type: none"> 1. The students will be instructed to separate the Skittles on their desk by color. 2. They will then count the number of each color, and write them on the worksheet individually. 3. As a group, the students will combine all of their results onto a group sheet. 4. Each group will provide the total tally of red Skittles, and we will write them on the board. 5. We will use this data to find the mode, median, and range. We will define and model mode, median, and range using the data about the groups red skittles. 6. This will be repeated with another color. 7. After completing this as a class, the students will find the mode, median, and range of the colors in their own bags. <p>(Jamie and Ashton)</p>
Closure	We will review by having a student from each group share their results and go over mode, median, and range once again.
Differentiated Instruction	Struggling students will be scaffolded by a teacher during the lesson. Advanced students can find the mean of the data as well.

ASSESSMENT / EVALUATION

Assessment/Rubrics	The students will be assessed using the charts they have completed to be sure their data is correct.
Reflections	<p><u>Day 1</u></p> <p>Ashton</p> <p>I was surprised at how quickly the students understood the material we taught because our mentor teacher told us the students have not been over this material previously. I was also surprised that none of the students attempted to eat the skittles before we told them too. The group of students we have to teach are very talkative, so it was hard at times to keep them on task when they were tempted by candy. If I were going to complete this</p>

lesson again I would have the skittles and napkins ready for the students beforehand to cut down on the instructional time that was lost. We had the students come to the board and help complete the problems. It was beneficial to see the students progress through the lesson while completing the problems on the board. Incorporating the Smart board into the lesson gave it variety, but it was difficult to get the students back on task. Allowing the students to eat their skittles while we were going over the last problem was a mistake because we lost the class' attention.

Jamie-

This lesson went well as far as student learning goes. The students were almost all able to grasp the concepts quickly. We used Skittles in this lesson and gave the students strict instructions at the beginning that if any of the students ate the Skittles, that we would throw them all away. This method worked wonderfully. The student were able to sort out the Skittles and use them several times to create class data without eating them. I was definitely surprised by this, as there were several students in the class whom I thought would eat the Skittles no matter what directions I gave them. I realize now that I should have prided them more on that and gave out a few "peace passes" for the good behavior. Remembering everything that goes into teaching is difficult when I am actually teaching. Combining praise, discipline, time management, and getting the information through to the students is something that I need more work on doing efficiently. Being completely prepared for the lesson is also something that I need to work on. I understand that practicing each lesson before I teach it is not an attainable thing to do, but going over the lesson several times is something that we need to work on. We did not tear the paper towels in advance to this lesson and although it seemed like a simple task, it really took valuable time away from teaching. Allowing the students to eat the Skittles before we finished the last problem due to time constraints was also a mistake. The students did not pay attention to the last problem and were only worried about eating the Skittles. Using the Skittles and the SmartBoard at a point in this lesson was an excellent way to keep the students' attention and kept them on task and excited about the lesson.

Day 2

Jamie-

We were able to teach this lesson a second time to the other fourth grade class. This was extremely beneficial to us, as we were able to change certain things that we did not like. We re-worded the song a little to make it easier for students to understand. We also were much more prepared this time. We had the paper towels set out ahead of time and knew the questions that we wanted to ask. The only challenge was that there is a student in the class who is hard-of-hearing. The teacher must wear a head set when talking so she can hear on a small speaker she has on her desk. When we taught the first time, we each took turns explaining things and asking questions. When we taught this class, however, we had to chunk the lesson up more so that we did not have to keep switching the headset and losing time. We also waited until the end of the lesson to allow the students to eat the skittles.

Ashton-

We had the opportunity to teach this lesson second time to the other fourth grade class. This experience was very beneficial to us because not many teachers get the opportunity to redo a lesson. I went into the other classroom thinking the second time around that the lesson was bound to be very smooth. We fixed everything that did not go as planned the first day we did it. We handed out paper towels and skittles much more quickly. We reworded the song so it was not confusing to the students. We had the Smart board ready for students when we needed to use it. I felt like everything was going to go perfectly. However, it did not. There is a student in this classroom that is hard of hearing so when you are teaching you have to wear a headset so the student can hear. This made it difficult because the way we had the lesson split up we had to keep switching the headset back and forth which cost us instructional time. If I were to do this again it would have been easier having one of us talk and wear the headset the whole time while the other helped students who are struggling. We also were unfamiliar with the students in the room and the set-up of the room, which added to the difficulty of the lesson. As much as I thought we were prepared going into day two of this lesson I was wrong. This experience has shown me that every classroom is different and every classroom has obstacles that you must work with everyday. It has also shown me to never think I am well prepared because students will be happy to show you that you are not.

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